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Research Article

Factors Associated with Spirituality in Patient Undergoing Hemodialysis

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Abstract

Aims: Chronic Kidney Disease (CKD) is a global health burden, with hemodialysis being a critical yet life-altering therapy. Spirituality has emerged as an essential dimension influencing the well-being of patients undergoing hemodialysis. However, there is limited understanding of the factors associated with spirituality among Indonesian patients, necessitating culturally sensitive research.
Objective: This study aimed to identify factors associated with spirituality in patients undergoing hemodialysis in Indonesia.
Methods: A cross-sectional study was conducted in Jakarta's hemodialysis unit in 2017, involving 148 participants selected through consecutive sampling. Data were collected using validated instruments, including the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT Sp12), the Beck Depression Inventory (BDI), the Medical Outcomes Study-Social Support Survey (MOS-SSS), and the Kidney Disease Quality of Life Short Form (KDQOL-SF36). Data were analyzed using univariate, bivariate, and multivariate logistic regression.
Results: The majority of participants were female (52%), married (76.3%), and unemployed (75%), with an average age of 54.86 years. Half of the participants exhibited high spiritual levels (50.7%). Social support (OR = 1.052, $p < 0.001$) and depression ($p < 0.05$) were significantly associated with spirituality. Other variables, including HD frequency, duration of HD, and burden of kidney disease, were identified as confounders.
Conclusion: Social support and depression significantly influence the spiritual well-being of hemodialysis patients, highlighting the need for comprehensive care approaches that address social and mental health alongside spiritual needs. Tailored interventions, including family-centered and spiritual counseling, can improve the quality of life for these patients.

Keywords:
Chronic kidney disease, depression, hemodialysis, Indonesia, quality of life, spirituality, social support

INTRODUCTION

Chronic Kidney Disease (CKD) presents a significant burden on healthcare systems worldwide, profoundly affecting patients' health, families, and socio-economic circumstances (1). In 2017, the global prevalence of CKD was estimated at 9.1%, accounting for approximately 700 million cases. It ranked as the 12th leading cause of death globally, a stark increase from its 17th position in 1990 (2). Mortality due to

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CKD has risen sharply, particularly in regions such as Latin America, Central Asia, and high-income countries, with an increase of nearly 60% (2). In the United States alone, approximately 131,600 individuals began therapy for End Stage Renal Disease (ESRD) in 2018, with a total of 786,000 people living with ESRD, of which 71% relied on dialysis (3).

In Indonesia, the prevalence of chronic kidney disease has grown alarmingly, from 0.2% in 2013 to 3.8% in 2018, as reported by the Basic Health Research (Riskesdas) (4). The number of hemodialysis patients continues to increase, with 132,142 new and active patients recorded in 2018—a figure nearly double that of 2017 (4). Hemodialysis therapy, while life-sustaining, impacts patients' physical, psychological, and socio-economic well-being, often requiring robust coping mechanisms to navigate the associated challenges (5).

Religion and spirituality have emerged as critical coping strategies for individuals undergoing hemodialysis (5). These dimensions provide patients with a framework to understand the progression of their illness and foster resilience in the face of adversity. Research indicates that spiritual beliefs and practices can enhance coping abilities, reduce stress, and improve overall well-being (5,6). Moreover, spirituality is associated with better mental health, healthier lifestyles, and a reduced need for healthcare services (1,6).

Several factors influence the spiritual well-being of hemodialysis patients. Tavassoli et al. [6] highlighted the role of spiritual health in fostering hope and life aspirations among patients, while Zhang et al. (7) identified disease acceptance, family function, and hope as significant predictors of spiritual health. Similarly, Fradelos et al. (8) demonstrated that factors such as marital status, educational level, comorbidities, and location of residence could predict spiritual well-being in patients with ESRD.

Although substantial research has been conducted on the factors influencing spirituality among hemodialysis patients in various countries, there remains a gap in understanding these dynamics within the Indonesian context. The socio-economic, cultural, and geographical diversity of Indonesia necessitates localized research to explore how these factors influence spiritual health. Addressing this gap is essential for healthcare providers to design interventions that cater to the spiritual needs of patients, ultimately enhancing their quality of life. This study aims to identify the factors associated with spirituality in hemodialysis patients in Indonesia, thereby contributing to the existing body of knowledge and informing culturally sensitive healthcare practices.

METHODS

Design

In this study, a cross-sectional design was used. This study aimed to investigate the factors that impact hemodialysis patients' spirituality levels. This study was done at Jakarta's hemodialysis unit in 2017.

Sample

This study adopts a consecutive sampling method based on purposive sampling. A participant is a respondent who meets the inclusion criteria during the research. Outpatients having hemodialysis for at least three months who can converse verbally in Indonesian and are willing to participate are the inclusion criteria for this study. Respondents included in this study as participants are 148 respondents.

Instrument

The Kidney Disease Quality Of Life-Short Form 36 (KDQOL-SF 36) subscales burden kidney disease, the Beck Depression Inventory (BDI), the Functional Assessment of Chronic Illness Therapy, and the respondent characteristics questionnaire were the instruments used in this study (FACIT Sp12). The patient's demographic information (age, gender, and religion), marital status, occupation, length of hemodialysis, and other questions were

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included in the respondent's characteristic questionnaire.

The Beck Depression Inventory (BDI) questionnaire was used to identify depression. This questionnaire was translated into language by Waluyo (9) and included 21 (twenty-one) statements regarding depression. The results of the validity and reliability test Cronbach 0.653 - 0.822 show that all of the question items are deemed valid and reliable. This BDI questionnaire uses a Likert scale with a range of 0-3 where the classification of scores is divided into four groups: a score of 1-10 for not experiencing depression, a score of 11-20 for mild depression, a score of 21-30 for moderate depression, and a score of 31-40 or more severe depression.

Functional Assessment of Chronic Illness Spiritual Therapy (FACIT Sp12) questionnaire consisting of 12 question items. Brady et al. (9) created this questionnaire in 1999. The results of the validity and reliability test Cronbach in this study is 0.801. This questionnaire consists of 3 parts, namely the meaning of statement items 2, 3, 5, and 8, peace (peace) on question items 1,4, 6, and 7, and faith (faith) on statements 9,1,0,11, and 12. This questionnaire uses a Likert scale of 0-4 with 0 (not at all), 1 (rarely), 2 (sometimes), 3 (quite often), and 4 (very often). Scoring is done by adding all the scores for each answer, ranging from 0-48, with 0 being the lowest and 48 being the highest.

The Medical Outcomes Study Social Support Survey (MOS-SSS) questionnaire proposed by Sherbourne and Stewart (9) in 1991 was used by researchers to determine the social support received by CKD patients undergoing hemodialysis. The results of the validity and reliability test Cronbach in this study is 0.907. This questionnaire consists of 19 question items which are divided into four sub-variables, namely emotional support (question number 1,4,6,8), information support (question number 2,3,5,7), tangential/instrumental support (question number 9,10,11,12,19), attitude support/award (questions number 13,14,15), and support for social interaction/social networking (question number 16, 17, 18). This questionnaire uses a Likert scale of 1-5, with 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always.

Burden of kidney disease was taken from the Burden of Kidney Disease subscale in the Kidney Disease Quality Of Life-Short Form 36 (KDQOL-SF 36) questionnaire. The questions include how disruptive kidney disease affects daily activities, takes time, causes frustration, or makes the respondent feel a burden. The KDQOL survey was developed by Ron D Hays and the KDQOL-SF36 team in 1994 to measure HRQOL in kidney disease. This KDQOL-SF36 has been translated into Indonesian and used by Hidayah (10) on 185 hemodialysis patients in Indonesia with 100% content validity. The researchers do the validity and reliability test Cronbach in this study, with the result being 0.806.

Procedures

The first step is to obtain ethical clearance from the ethical committee. After obtaining approval from the head of the hospital in East Jakarta, researchers must conduct their research. After gaining permission, the study was undertaken. The participant is selected by the researcher based on inclusion criteria. The researcher then introduces the study's goals, timeline, advantages, methodology, and respondents' rights. Participants were asked whether they wanted to participate and were then asked to sign a consent form. The researcher distributed the respondent's characteristics questionnaire, Functional Assessment of Chronic Illness Therapy Spiritual (FACIT Sp12), The Medical Outcomes Study Social Support Survey (MOS-SSS), Beck Depression Inventory (BDI), and Burden of Kidney Disease subscale in Kidney Disease Quality Of Life-

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Short Form 36 (KDQOL-SF 36) questionnaire to the participants. After the respondent completes the questionnaire, the researcher verifies its completeness. If there are incomplete data, the researcher will request completion from the respondent.

Data analysis

Univariate analysis is used to explain the characteristics of each variable; it is divided into numerical and categorical data. In numerical data such as age, length of hemodialysis, social support, and burden of kidney disease, the univariate analysis used are mean, median, standard deviation, and percentile (min-max). The univariate analysis was used on categorical data such as gender, education, employment, frequency of HD, duration of HD, marital status, spiritual level, and depression using a frequency distribution with a percentage. In univariate analysis, the data normality test was conducted first to determine the type of bivariate analysis to be used. The normality test of the data used in this study is the Kolmogorov-Smirnov test. If the p-value > 0.05, the data is normally distributed and bivariate analyzed using the parametric test. If the p-value < 0.05, then the data is not normally distributed and bivariate analysis using a nonparametric test. The bivariate analysis used was the Mann-Whitney test and the chi-square test. The multivariate analysis used was logistic regression.

RESULTS

Table 1 summarizes the categorical characteristics of the respondents. The majority of participants were female (52%), had secondary-level education (56.1%), were unemployed (75%), underwent hemodialysis 2 times per week (92.6%), and had sessions lasting 4 hours (57.4%). Most participants were married (76.3%), had a high spiritual level (50.7%), and did not show signs of depression (51.3%).

Table 1. Characteristics of Respondents (Categorical Variables)

Variable	Frequency	Percentage (%)
Gender		
Female	77	52.0
Male	71	48.0
Education		
Primary school	22	14.9
Secondary school	83	56.1
College	43	29.0
Employment		
Unemployed	111	75.0
Employed	37	25.0
Frequency of HD		

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2x/week	137	92.6
3x/week	11	7.4
Duration of HD		
3.5 hours	4	2.7
4 hours	85	57.4
4.5 hours	29	19.6
5 hours	30	20.3
Marital status		
Not married	4	2.6
Married	116	76.3
Divorced	28	18.4
Spiritual level		
Low spiritual level	73	49.3
High spiritual level	75	50.7
Depression		
Normal	76	51.3
Mild depression	59	39.3
Moderate depression	9	6.1
Severe depression	4	2.7

Table 2 presents the continuous characteristics of respondents. The mean age of participants was 54.86 years, and the average length of hemodialysis was 31.60 months. The mean social support score was 81.19, while the mean burden of kidney disease score was 41.89.

Table 2. Characteristics of Respondents (Continuous Variables)

Variable	Mean	Median	SD	Min-Max	95% CI
Age (years)	54.86	55.00	11.43	27–81	53.00–56.71
Length of hemodialysis (months)	31.60	24.00	31.40	3–192	26.50–36.70
Social support (score)	81.19	87.00	14.67	43–95	78.81–83.57
Burden of kidney disease (score)	41.89	43.75	21.03	0–100	38.48–45.31

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Table 3 indicates that the variables with a p-value < 0.25, such as social support, burden of kidney disease, marital status, employment, HD frequency, duration of HD, and depression, were selected for inclusion in multivariate analysis.

Table 3. Bivariate Selection Results

Variable	p-value
Age	0.417
Social support	0.000*
Burden of kidney disease	0.002*
Length of HD	0.665
Marital status	0.039*
Gender	0.875
Education	0.521
Employment	0.154*
HD frequency	0.194*
Duration of HD	0.104*
Depression	0.000*

*p-value < 0.25

Table 4 shows the multivariate analysis results. Social support was the most significant factor influencing the spiritual level of hemodialysis patients (OR = 1.052, p < 0.001). Depression also played a significant role, with specific levels of depression demonstrating notable effects on spiritual well-being. HD frequency, duration of HD, and burden of kidney disease were identified as confounding variables.

Table 4. Multivariate Analysis

Variable	Coefficient B	Exp(B)	p-value
Constant	-2.740	0.065	0.193
HD Frequency	-1.385	0.250	0.250
Duration of HD (1)	-1.325	0.266	0.421
Duration of HD (2)	-0.643	0.525	0.710
Duration of HD (3)	-0.909	0.403	0.600
Social support	0.051	1.052	0.000*
Burden of kidney disease	0.012	1.012	0.252
Depression (1)	-1.301	0.272	0.001*
Depression (2)	-2.548	0.078	0.027*
Depression (3)	-1.620	0.198	0.188

*Significant at p-value < 0.05

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DISCUSSION

The current study found that most respondents were female, secondary school graduates, unemployed, married, and undergoing hemodialysis twice a week for four hours. These findings align with Tavassoli et al. (11), Kharame et al. (12), and Zhang et al. (7), who reported that unemployment was prevalent among hemodialysis patients. However, other studies have shown that male respondents predominated in similar populations (7,11,12). This discrepancy may stem from regional or cultural differences influencing employment opportunities and healthcare-seeking behaviors among men and women.

A significant finding in this study was that most participants demonstrated a high spiritual level. This finding corroborates Tavassoli et al.(6), who found high levels of spiritual health in hemodialysis patients. Conversely, Zhang et al. (7) identified moderate levels of spiritual health, while Fradelos et al. (8) reported satisfactory spiritual well-being among their respondents. The variability in spiritual health levels may depend on the spiritual beliefs and cultural context of the study populations. Spiritual health is essential for coping with chronic illness, offering patients a sense of purpose, satisfaction, and resilience (1). This aligns with the concept that spiritual well-being enhances therapeutic motivation and psychological balance during a health crisis.

Interestingly, no significant relationship was found between demographic factors (age, gender, education, employment, marital status) and spiritual levels in this study. This result is consistent with findings by Zhang et al. (7) and Kharame et al. (12), who observed no significant relationships between similar variables and spiritual health. However, Cheawchanwattana et al. (13) identified gender and age as significant predictors of spiritual well-being, with female and elderly patients showing better outcomes. These contrasting results may reflect methodological differences or variations in cultural and socioeconomic contexts.

Two key variables significantly associated with spiritual health in this study were social support and depression. Social support emerged as the most influential factor, consistent with findings by Zhang et al. (14), who emphasized the role of family functioning in predicting spiritual health. Families provide critical emotional, material, and spiritual support, especially during prolonged illnesses like kidney failure. However, extended caregiving responsibilities may lead to caregiver burnout, affecting family dynamics and patient support (15). Therefore, interventions aimed at bolstering family support systems are crucial.

Depression was also significantly related to spiritual health, aligning with Kharame et al. (12) and Martinez et al. (16), who found that mental health strongly influences spiritual well-being. Patients with higher spiritual wellness tend to experience fewer psychological and somatic symptoms, as spiritual health fosters coping mechanisms for the psychosocial challenges of chronic illness (16,17). This highlights the need for integrated care approaches that address both the mental and spiritual dimensions of patient health (18–20).

The findings underscore the importance of assessing spiritual well-being as part of routine care for hemodialysis patients. Interventions focusing on enhancing social support and addressing depressive symptoms are likely to have a positive impact on spiritual health(21). Healthcare providers should consider family-centered approaches and mental health counseling as integral components of comprehensive care. Furthermore, incorporating spiritual counseling or support into treatment protocols may enhance patient coping mechanisms and overall well-being(22).

This study has several limitations. First, it employed a cross-sectional design, which limits the ability to establish causal relationships. Second, the study population

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was limited to a single geographic area, potentially affecting the generalizability of findings. Third, self-reported measures of spiritual health and depression may introduce bias(23). Finally, potential confounding factors, such as socioeconomic status and cultural practices, were not comprehensively explored.

CONCLUSION

This study revealed no significant relationships between demographic factors and spiritual levels among hemodialysis patients. However, social support and depression significantly influenced spiritual health, with social support being the most impactful variable. These findings highlight the critical role of social and mental health support in enhancing the spiritual well-being of hemodialysis patients. Future research should explore longitudinal designs and include diverse populations to validate these findings and further investigate the interplay between spiritual, social, and mental health.

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Conflict of Interest
The authors have no conflict of interest to declare.

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